1,121,146

PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improvements in or relating to Tractor and Loader Combinations

We, MASSEY-FERGUSON-PERKINS LIMITED, a British Company, of 33 Davies Street, London, W.1., Great Britain, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to the combination with tractors or other propelled vehicles of loaders adapted for connection thereto, such loaders being referred to hereinafter and in the claims as "loaders of the type stated", and more specifically to stands for such loaders. The term "loader" is to be construed herein and in the claims as meaning a device for use in handling materials generally, for example by picking them up from one place and setting them down in another place or in a position of or for use or for transport.

The invention is in combination, a propelling vehicle and a loader of the type stated, the loader including a boom adapted for connection to the vehicle for raising and lowering movement relative thereto, a loading implement pivotally connected to the outer end of the boom, first coupling elements on the loader and second coupling elements on the vehicle, and a stand including complementary coupling elements selectively engageable with said first coupling elements to support the loader when detached from the vehicle, or with said second coupling elements to act as a guard for the vehicle radiator.

Preferably the stand has a ground-engaging member disposed, when the stand is mounted on the loader, on the opposite side of the centre of gravity of the boom from the loading implement.

Preferably also the bomb consists of spaced side arms connectible to opposite sides of the vehicle, said stand being of substantially U-shape, the free ends of the legs of the U being connectible one to each arm of said boom.

An embodiment of the invention will now be described, by way of example only, with reference to the accompanying drawings in which:—

Fig. 1 is a view of a loader of the type stated and stand mounted on a tractor;

Figs. 2 and 3, show two positions in the detachment of the loader from the tractor; and,

Fig. 4 shows the stand detached from the loader and mounted on the front of the tractor.

Referring to the drawings the loader 10 includes a boom 11 mounted on the tractor by pivot pins 12 and 13 connected to an upright support 14 and a hydraulic ram 15 respectively, the ram being operable to raise and lower the boom. At the end of the boom opposite the pivot pin 12, a loading implement 16 is pivotally mounted on pins 16A and may be locked against rotation by a releasable locking mechanism 27. Between the implement and the pivot pin 13 a stand 17 is fixed to the boom.

The stand 17 is of tubular construction and is substantially U-shaped, the base 19 of the U forming a ground-engaging member. First coupling elements or sleeves 16 are carried by the boom 11, and the ends of the arms of the U form complementary coupling elements 20 (Fig. 1) slidably engaged with the sleeves 18, the stand being secured in the sleeves by pins 21.

In operation to remove the loader from the tractor the boom 11 is lowered until the stand 17 engages the ground as shown in Fig. 2. The stand is connected to the loader in such a manner that the centre of gravity of the loader lies forwards of the ground engaging member 19. With the loader in the Fig. 2 position the pivot pins 12 and 13 are removed and the weight of the loader causes it to tilt forward until the loading implement 16 contacts the ground as shown in Fig. 3. In this position the implement and stand form a stable support structure for the loader and the loader

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is completely detached from the tractor so that the latter may be driven away.

In order to reconnect the loader, the tractor is driven into the Fig. 3 position and the operator tilts the boom 11 rearwardly and downwardly by hand and replaces the pivot pins 12 and 13.

When the loader is reconnected the tand 17 is removed, but it is desirable to retain the stand adjacent the loader or tractor for re-use. Thus second coupling elements or sleeves 22 are provided at the foot of the tractor radiator grille 23 and the stand may be fitted into these and secured by pins 24 as shown in Fig. 4 to form a protective guard for the radiator or radiator grille 23.

It is possible to replace the loading implement 16 shown with other implements which may differ in weight and provision is therefore made for altering the position of the stand 17 so as to ensure that it lies close to the centre of gravity of the loader. If the stand is too far rearwards of the centre of gravity it will be difficult for the operator to tilt the boom for reconnection to the tractor. Thus, sleeves 25 are provided which may be located either forwardly or rearwardly of the sleeves 18 on the loader so as to alter the position of the stand relative to the loading implement 16. Thus if a heavier loading implement is used the sleeves 25 will be removed from the position shown in Fig. 3 and replaced ahead of the sleeves 18 of the boom. In order to ensure that the sleeves 25 cannot become detached or lost when the stand is in use as a protective guard for the radiator or radiator grille 23, the length of the sleeves 22 is such that the sleeves 25 may remain on the stand as shown in Fig. 4.

WHAT WE CLAIM IS:—

1. In combination, a propelling vehicle and a loader of the type stated, the loader including a boom adapted for connection to the vehicle for raising and lowering movement relative thereto, a loading implement pivotally connected to the outer end of the boom, first coupling elements on the loader and second coupling elements on the vehicle, and a stand including complementary coupling elements selectively engageable with said first coupling elements to support the loader when detached from the vehicle, or with said second coupling elements to act as a guard for the vehicle radiator.

2. The combination according to claim 1, in which said stand has a ground-engaging member disposed, when the stand is mounted on the loader, on the opposite side of the centre of gravity of the boom from the loading implement.

3. The combination according to claim 2, including a locking mechanism mounted on the loader and actuable to lock said implement against pivotal movement relative to said boom.

4. The combination according to claims 2 and 3, in which said implement, when locked, and said stand form a stable support structure for the loader when detached from the tractor.

5. The combination according to any preceding claim in which said boom consists of spaced side arms connectible to opposite sides of the vehicle, said stand being of substantially U-shape, the free ends of the legs of the U being connectible one to each arm of said boom.

6. The combination according to claims 2 and 5, in which the base of said U constitutes said ground-engaging member.

7. The combination according to any preceding claim, in which said first and second coupling elements are sleeves with which said complementary coupling elements are slidably engageable.

8. The combination according to any preceding claim, including means for adjusting the position of said stand along said boom.

9. The combination according to claim 8, in which said means for adjusting said stand comprises spacing members for use in conjunction with said first coupling elements.

10. In combination, a propelling vehicle and a loader of the type stated, substantially as hereinbefore described with reference to the accompanying drawings.

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Sheet 1

Fig.1.

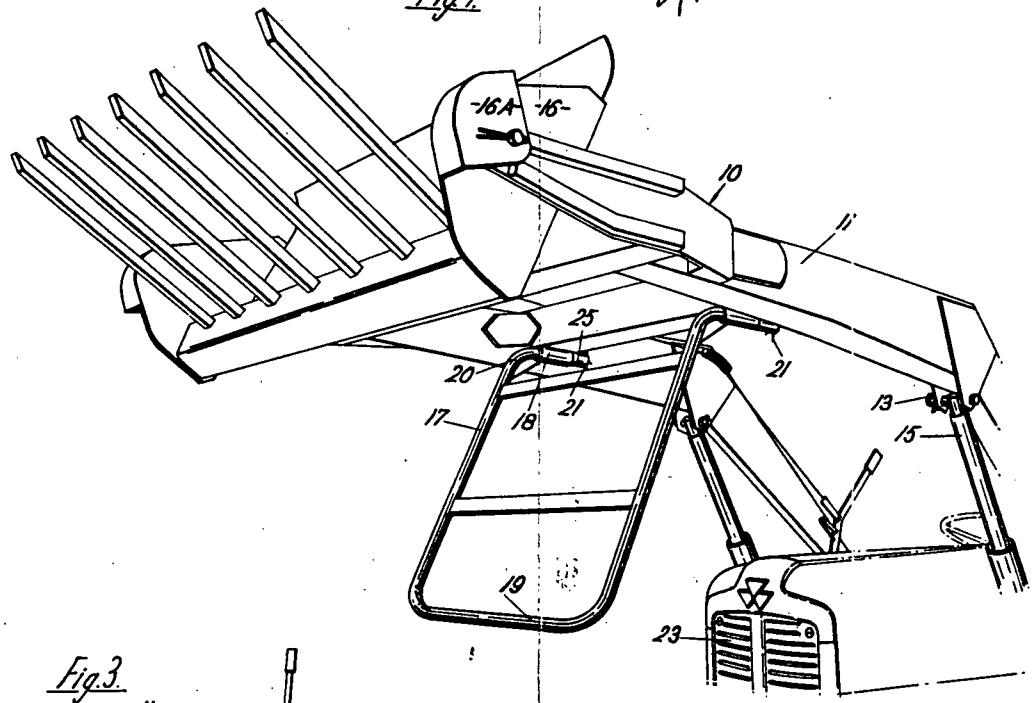


Fig.3.

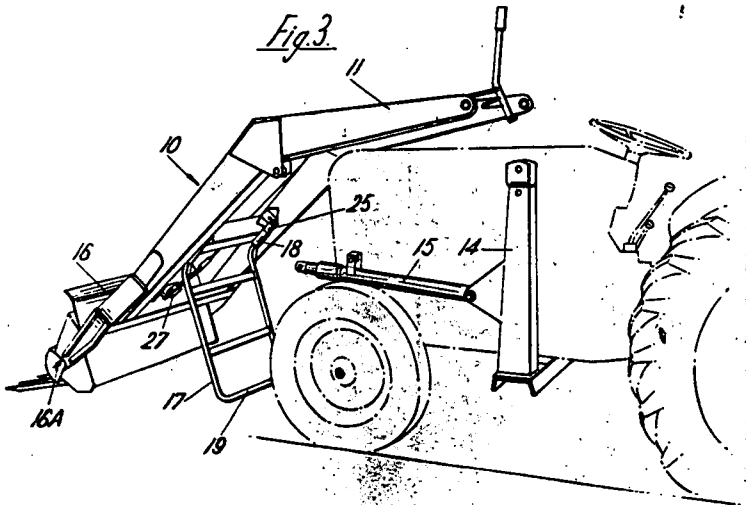
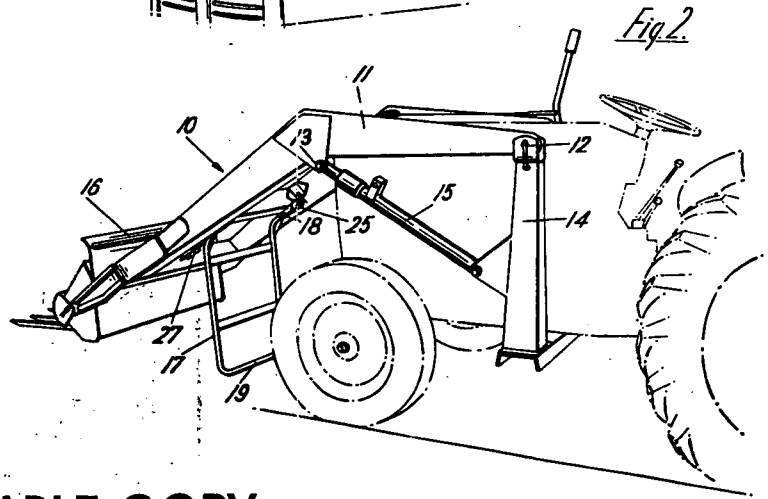


Fig.2.



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Sheet 2

Fig.4.